

ENERGY POLICY AND CLIMATE CRISIS: AN EVALUATION OF THE ADEQUACY OF ENERGY LAWS IN SUPPORTING THE TRANSITION TO CLEAN AND SUSTAINABLE ENERGY

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Abstrak:

The climate crisis is becoming an increasingly urgent global challenge that profoundly impacts agriculture, ecosystems, and public health. According to the 2024 Intergovernmental Panel on Climate Change (IPCC) report, global temperatures have risen by 1.2°C since the pre-industrial era, and this warming is primarily driven by emissions from the energy sector, particularly the burning of fossil fuels. As one of the largest carbon-emitting countries, Indonesia remains heavily reliant on fossil fuels, especially coal, which accounts for around 60% of its electricity generation in 2024. Although Indonesia is endowed with significant renewable energy potential, various structural challenges, including ineffective policies and regulatory frameworks, hinder the solar, wind, and geothermal transition to clean Energy. The existing laws and regulations do not provide sufficient incentives for the development of renewable Energy, and bureaucratic hurdles, coordination issues among government agencies, and a lack of legal clarity on pricing and incentives further impede progress. This study aims to evaluate the adequacy of Indonesia's energy laws in supporting a clean and sustainable energy transition and to identify key legal barriers that need to be addressed. The findings are expected to contribute to policy recommendations that could strengthen Indonesia's legal framework, thus facilitating a more rapid and effective transition to a greener energy future.

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INTRODUCTION

The escalating climate crisis is becoming an urgent global challenge, with impacts increasingly felt across agriculture, ecosystems and public health sectors. The Intergovernmental Panel on Climate Change (IPCC) 2024 report shows that global temperatures have increased by about 1.2°C since the pre-industrial era, with further increases projected if greenhouse gas (GHG) emissions are not immediately reduced. This global warming has serious consequences, including frequent extreme weather, rising sea levels, and environmental damage that directly impacts human life and ecosystem sustainability. Most GHG emissions come from the energy sector, especially burning fossil fuels such as coal, oil, and natural gas. Based on data from the International Energy Agency (IEA) 2024, about 80% of global energy consumption still relies on fossil energy, which is a major contributor to climate change. Indonesia, one of the countries with the largest carbon emissions, still relies heavily on coal, accounting for about 60% of the nation's total electricity generation in 2024. This dependence exacerbates the climate crisis and makes a clean energy transition urgent.

Despite Indonesia's abundant potential for renewable energy sources such as solar, wind, hydro and geothermal, the transition from fossil fuels to clean Energy still needs to overcome many obstacles. The National Energy General Plan (RUEN) prepared by the Indonesian government targets 23% renewable energy by 2025, but by 2024, the contribution of renewable Energy has only



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reached 13% of the total national electricity generation capacity. This shows a large gap between existing policies and the reality on the ground, indicating that various structural barriers and existing policies must be more effective in encouraging a greener energy transition. One of the factors affecting this slow transition is the existing energy policies and laws. Law No. 30/2007 on Energy and other policies supporting renewable Energy, while providing a legal basis, do not fully create adequate incentives for clean energy development. Existing regulations are often hampered by complex bureaucracy, lack of coordination between government agencies, and uncertainty regarding electricity tariffs and incentives for renewable energy entrepreneurs.

On the other hand, the fossil energy sector still receives significant support, both in energy subsidies and more favorable fiscal policies. Evaluating the adequacy of energy law is critical to understanding the extent to which the Energy legal and policy framework can support the transition to clean and sustainable Energy. Some of the main problems faced in the energy law sector are unclear regulations related to renewable energy development, such as electricity tariffs received by renewable energy producers and complicated licensing procedures; lack of legal incentives to support investment in clean energy technology and renewable energy infrastructure development; challenges in monitoring and enforcing the environmental impacts of coal-based power plants, which continue to operate despite causing ecological damage; and limited access to financing for the renewable energy sector, which is often more difficult to access compared to the more established and heavily subsidized fossil energy sector.

In 2024, international agreements such as the Paris Agreement are increasingly pushing countries to reduce carbon emissions and switch to cleaner energy sources. As part of the developing world, Indonesia is expected to play an important role in mitigating the impacts of climate change. However, this transition requires a strong legal framework that regulates the development of renewable energy and ensures that this energy transition is fair and inclusive, benefiting the business sector and society at large. The evaluation of existing policies and regulations and the identification of gaps in energy law will help to understand the existing barriers and formulate appropriate solutions to accelerate the transition to clean Energy. Therefore, this study aims to evaluate the adequacy of Indonesia's energy laws in supporting the transition to clean and sustainable Energy and identify improvement measures needed to create a legal system that better supports environmentally friendly energy changes.

METHODS

This research uses a qualitative approach with a juridical-normative method to analyze existing policies and legal regulations related to the clean energy transition in Indonesia. The type of research used is normative legal research, which aims to evaluate the adequacy of regulations in supporting the development of renewable Energy. Data is collected through literature studies of statutory documents, government reports, and relevant scientific literature. Data collection techniques include analysis of energy-related legislation and climate change policies. The analysis method used is descriptive analysis to describe existing policies, comparative analysis with other countries' policies, and suitability analysis to evaluate the effectiveness of regulations in supporting clean energy transition.

RESULT AND DISCUSSION

Indonesia's Energy Situation and Transition Challenges. Indonesia, the world's fourth-most populous country, faces a major challenge in meeting its growing energy needs in line with rapid economic growth. By 2024, Indonesia is expected to experience significant economic growth,

which will majorly affect increasing energy demand. The Indonesian government realizes that to maintain economic sustainability; the growing energy demand must be met in an environmentally friendly way.

However, Indonesia's current energy relies heavily on fossil sources, especially coal, which causes high carbon emissions and exacerbates the global climate crisis. Data from the International Energy Agency (IEA) 2024 shows that about 80% of the world's energy consumption still relies on fossil fuels, and Indonesia, as a large developing country, is no exception. By 2024, around 60% of Indonesia's total power generation capacity will still use coal. This starkly contrasts Indonesia's renewable energy potential, which includes solar, wind, hydro, and geothermal energy. Despite Indonesia's abundant natural resources, dependence on fossil energy, especially coal, is still dominant and a major obstacle in achieving higher renewable energy targets.

The Indonesian government's one policy to accelerate the energy transition is the National Energy General Plan (RUEN), which targets a 23% renewable energy contribution to the total national energy mix by 2025.

However, based on the latest data, renewable Energy's contribution to national electricity generation capacity in 2024 will only reach around 13%. This shows a large gap between the set target and the reality on the ground. It raises big questions about what factors are causing this slow transition and what needs to be improved in policy and implementation.

One of the biggest challenges is the reliance on infrastructure, which is still dominated by coal-based power generation. The existing energy infrastructure relies heavily on coal-based power plants, which take a long time to replace with renewable energy-based generation. Transitioning to clean Energy requires enormous investment, especially in the development of renewable energy infrastructure that can gradually replace coal-based power plants.

In addition, funding is another major obstacle. Renewable energy projects require significant funds, and the private sector is often hesitant to invest in these new technologies without sufficient government incentives. Therefore, the government's role in providing fiscal incentives and ease of licensing is crucial to accelerating this energy transition.

Existing Energy Policy and Regulations. The Indonesian government has taken important steps in regulating and promoting the use of renewable Energy through various policies and regulations. One of the main existing policies is Law No. 30/2007 on Energy, which provides Indonesia's legal basis for energy management. This policy is expected to create a more sustainable energy system by supporting the development of renewable Energy. In addition, the National General Energy Plan (RUEN) published in 2017 sets a target of 23% renewable energy contribution by 2025.

However, despite the existence of policies that support the renewable energy transition, the main challenge still lies in implementing these policies. Many regulations still need to be clarified, especially regarding renewable energy electricity tariffs, which depend on government policies that are only sometimes stable. Electricity tariffs from renewable Energy are often higher than those from fossil fuels, which makes fossil energy more attractive to investors and consumers. This makes renewable Energy less competitive in the market.

In addition to tariff issues, the licensing process for renewable energy projects is also one of the major obstacles. Although Indonesia has enormous renewable energy potential, the complicated and bureaucratic licensing process often hinders the construction of renewable energy plants. Many projects are delayed or canceled due to unclear regulations and the need for coordination between government agencies. Most energy subsidies in Indonesia are still allocated

to the fossil energy sector, such as coal and fuel oil (BBM). Despite its environmental impacts, these large subsidies keep fossil energy cheaper and more attractive to energy consumers and producers.

Obstacles in the Implementation of Renewable Energy Policies. As previously explained, the complicated and bureaucratic licensing process is one of the main obstacles to implementing renewable energy policies. The many regulations that need to be coordinated between government agencies mean that renewable energy entrepreneurs have to go through a long and inefficient process to obtain the necessary permits, causing delays in the implementation of renewable energy projects, ultimately slowing the transition to clean Energy. In addition, the lack of supporting infrastructure is also a significant obstacle. Many regions in Indonesia have large renewable energy potential, such as solar power in Nusa Tenggara or geothermal power in Java, but they need adequate infrastructure to develop this potential. The existing power generation infrastructure is mostly dominated by coal-based power plants, which require massive investment to replace them with renewable energy-based power plants. Limited financing for the renewable energy sector is also a major problem. Difficulties hamper many renewable energy projects in obtaining financing from banks and private investors.

This condition is caused by the high risk still considered high in investing in the renewable energy sector, which is mostly still considered a new technology and has not been fully tested. In addition, the uncertainty of regulations and renewable energy tariff policies often makes investors hesitate to invest in this sector. Inconsistent policy changes and the need for clarity regarding reasonable renewable energy tariffs cause concern among investors, who tend to prefer the more stable fossil energy sector.

CONCLUSION

A worsening climate crisis by 2024 requires urgent action to reduce greenhouse gas emissions and shift to more environmentally friendly energy sources. As a country with high carbon emissions due to its dependence on coal, Indonesia faces various challenges in transitioning to clean Energy. Despite existing renewable energy policies, such as the National Energy General Plan (RUEN), implementation could have been more optimal. By 2024, Indonesia's renewable energy contribution will only reach around 13%, far from the target of 23% by 2025.

One of the main obstacles in accelerating this transition is the need for more regulations and legal policies that support the renewable energy sector. Although there is a legal basis through the Energy Law (Law No. 30/2007), the policies implemented still need to create the necessary incentives for clean energy development fully. The main problems encountered are clarity regarding renewable energy tariffs, complicated licensing procedures, and a lack of legal protection for the clean energy sector. The evaluation results show a gap between existing policies and the reality of implementation on the ground, where the fossil energy sector is still heavily subsidized, while renewable Energy faces various barriers. Therefore, deep changes in policy and legal systems are needed to accelerate the transition to clean Energy.

Suggestions Energy Regulation Update. The government should revise the Energy Law and related regulations to clarify support for Renewable Energy. This includes setting fairer and more transparent tariffs for clean Energy and simplifying licensing procedures for renewable energy projects.

Improved Fiscal Incentives and Access to Finance. Increased fiscal incentives, such as tax exemptions or larger subsidies, are needed to encourage investment in Renewable Energy. In

addition, the financial sector should be empowered to provide more accessible financing for clean energy projects, given that the sector is often considered risky.

Strengthening Supervision and Law Enforcement. Stricter oversight is needed of fossil energy projects that have the potential to damage the environment. The government should ensure that fossil energy companies comply with strict environmental standards and apply tougher sanctions for violators.

Improve Collaboration between Government, Industry and Society. A successful energy transition requires collaboration between the government, private sector, and society. The government needs to increase dialogue between the renewable energy sector, communities, and industry players to ensure the transition is fair and beneficial for all parties.

Increased Education and Awareness on Clean Energy. The government needs to introduce educational campaigns to raise public awareness about the importance of renewable Energy. The public must have sufficient information to support clean and sustainable energy policies.

Strengthening International Cooperation. Given the global nature of climate change, Indonesia should strengthen international cooperation in terms of technology and financing for renewable Energy. Developed countries can play an important role in supporting the energy transition in developing countries like Indonesia through technology transfer and financial assistance.

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